A Marine Corps Interwar Period Analysis and Implications for Today

by

Lieutenant Colonel Gordon D. Miller United States Marine Corps



United States Army War College Class of 2013

DISTRIBUTION STATEMENT: A

Approved for Public Release Distribution is Unlimited

This manuscript is submitted in partial fulfillment of the requirements of the Master of Strategic Studies Degree. The views expressed in this student academic research paper are those of the author and do not reflect the official policy or position of the Department of the Army, Department of Defense, or the U.S. Government.

The U.S. Army War College is accredited by the Commission on Higher Education of the Middle States
Association of Colleges and Schools, 3624 Market Street, Philadelphia, PA 19104, (215) 662-5606. The Commission
on Higher Education is an institutional accrediting agency recognized by the U.S. Secretary of Education and the
Council for Higher Education Accreditation.

REPORT DOCUMENTATION PAGE					Form Approved OMB No. 0704-0188			
maintaining the data suggestions for reduct Suite 1204, Arlington	needed, and completing and ing the burden, to Departmen , VA 22202-4302. Responde	reviewing the collection of Defense, Washing onts should be aware to	n of information. Send cor ton Headquarters Services hat notwithstanding any o	mments regarding this burden s, Directorate for Information (estimate of operations on shall be	instructions, searching existing data sources, gathering and or any other aspect of this collection of information, including and Reports (0704-0188), 1215 Jefferson Davis Highway, subject to any penalty for failing to comply with a collection of		
1. REPORT DA XX-03-2013	TE (DD-MM-YYYY)	2. REPORT TYP STRATEGY	PE RESEARCH P	ROJECT		3. DATES COVERED (From - To)		
4. TITLE AND S						5a. CONTRACT NUMBER		
A Marine C	orps Interwar Pe	eriod Analysis	and implicatio	ns for Today		5b. GRANT NUMBER		
						5c. PROGRAM ELEMENT NUMBER		
6. AUTHOR(S) Lieutenant	Colonel Gordon	D. Miller				5d. PROJECT NUMBER		
	es Marine Corps					5e. TASK NUMBER		
						5f. WORK UNIT NUMBER		
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Colonel James C. Markley				8. PERFORMING ORGANIZATION REPORT NUMBER				
Center for Strategic Leadership and Development								
	ig/monitoring age y War College	ENCY NAME(S) A	ND ADDRESS(ES)			10. SPONSOR/MONITOR'S ACRONYM(S)		
122 Forbes Avenue Carlisle, PA 17013					11. SPONSOR/MONITOR'S REPORT NUMBER(S)			
	TION / AVAILABILITY A: Approved for	-	ase. Distribution	n is Unlimited.				
13. SUPPLEME Word Coun	entary notes t: 6422							
Significar periods. the doctri the appro interwar p and organ as a force	Marine Corps finited that lessons can be a These lessons a ne, organization opriate phases to be period is a force anization, and the a that can conduction.	e learned from the framed alowed, material, lead successfully that is transformaterial solu ct combat ope	n studying the pong the three pladership & education avigate the incormed with a neutions to supporterations during	post-World War I hases that constict cation, and personaterwar period. The wision, high quit the vision. Such	and p tute and nnel p he de uality p cess in	ther interwar period. cost-Vietnam War interwar in interwar period. Additionally, coillars must be applied during sired endstate of navigating an cersonnel, updated doctrine in an interwar period is defined ile going through lict.		
15. SUBJECT 1 Education,		sonnel, Visior	n, Maneuver W	arfare, Amphibio	us Op	erations, Vietnam, World War I		
16. SECURITY	CLASSIFICATION O	F:	17. LIMITATION OF ABSTRACT	18. NUMBER OF P	AGES	19a. NAME OF RESPONSIBLE PERSON		
a. REPORT UU	b. ABSTRACT UU	c. THIS PAGE UU	UU	36		19b. TELEPHONE NUMBER (Include area code)		

USAWC STRATEGY RESEARCH PROJECT

A Marine Corps Interwar Period Analysis and Implications for Today

by

Lieutenant Colonel Gordon D. Miller United States Marine Corps

Colonel James C. Markley
Center for Strategic Leadership and Development
Project Adviser

This manuscript is submitted in partial fulfillment of the requirements of the Master of Strategic Studies Degree. The U.S. Army War College is accredited by the Commission on Higher Education of the Middle States Association of Colleges and Schools, 3624 Market Street, Philadelphia, PA 19104, (215) 662-5606. The Commission on Higher Education is an institutional accrediting agency recognized by the U.S. Secretary of Education and the Council for Higher Education Accreditation.

The views expressed in this student academic research paper are those of the author and do not reflect the official policy or position of the Department of the Army, Department of Defense, or the U.S. Government.

U.S. Army War College CARLISLE BARRACKS, PENNSYLVANIA 17013

Abstract

Title: A Marine Corps Interwar Period Analysis and Implications for

Today

Report Date: March 2013

Page Count: 36

Word Count: 6422

Key Terms: Education, Leadership, Personnel, Vision, Maneuver Warfare,

Amphibious Operations, Vietnam, World War I

Classification: Unclassified

As the Marine Corps finishes twelve years of combat, it is entering into another interwar period. Significant lessons can be learned from studying the post-World War I and post-Vietnam War interwar periods. These lessons are framed along the three phases that constitute an interwar period. Additionally, the doctrine, organization, material, leadership & education, and personnel pillars must be applied during the appropriate phases to successfully navigate the interwar period. The desired endstate of navigating an interwar period is a force that is transformed with a new vision, high quality personnel, updated doctrine and organization, and the material solutions to support the vision. Success in an interwar period is defined as a force that can conduct combat operations during the interwar period while going through transformation, and results in a force that is victorious in the next major conflict.

A Marine Corps Interwar Period Analysis and Implications for Today

The only strategy that can mitigate the impact of surprise is knowledge of the past, an understanding of the present, and a balanced force that is willing and able to adapt in the future.

—The Joint Operating Environment, 2010¹

As the United States Marine Corps closes the chapter on twelve years of combat in the Middle East, it finds itself at the beginning of a new interwar period. As the Marine Corps has done in previous interwar periods, it must transform itself for the next major future conflict, while preserving the ability to respond to a crisis during the interwar period. Even though the military has not been correct in predicting when and where the next major conflict will occur², the Marine Corps has always successfully postured itself during previous interwar periods to apply the right changes at the right time to succeed in the next major war. The Marine Corps must apply the lessons learned from the previous interwar periods to ensure it is successful in the current upcoming interwar period.

This paper will show how the Marine Corps can leverage the lessons of the previous interwar periods to emerge from the newest interwar period postured to prevail in future conflict. As the Marine Corps conducts planning for the future of the service, the lessons from two significant 20th Century interwar periods, specifically the post-World War I and post-Vietnam War, are invaluable to today's planners for the insight they provide. These lessons will be examined in the light of the three phases characteristic of an interwar period: austerity, transition, and prosperity. Additionally, this paper will identify the changes that occurred in each interwar period along the institutional pillars of Doctrine, Organization, Training, Materiel, Leadership & Education,

Personnel, and Facilities (DOTMLPF).³ Using these perspectives (phasing and DOTMLPF pillars) this paper will outline a roadmap for the Marine Corps to follow into the next interwar period.

Interwar Period Definition

There has been much written about the Marine Corps' activities during the years between the end of World War I and the beginning of World War II, but there isn't an academically agreed-to definition of an interwar period.⁴ That being said, there are two critical factors that define an interwar period for a nation's military. First, the period must be bounded by significant conflict. Second, there is a significant reduction in funding for the Department of Defense, followed later by an increase at the follow-on conflict period.⁵ The fiscal drawdown overtly manifests itself in the reductions in active duty endstrength. By this definition, the periods between World War I and World War II, between World War II and the Korean War, between the Korean War and Vietnam War, between the Vietnam War and the Gulf War, and between the Gulf War and the Global War on Terrorism⁶ also qualify as interwar periods. The bounding by significant conflict, coupled with fiscal decreases and later followed by significant resource increases between the conflicts, defines an interwar period.

The three phases of austerity, transition, and prosperity provide a useful construct for analyzing the lessons of an interwar period. The first phase, austerity, is characterized by fiscal and manpower drawdowns following a major conflict. This is the time that can produce the most turmoil as the force contracts and difficult decisions on prioritization and allocation of resources must be made by the leadership of the service. This phase is also characterized in the Marine Corps with a sense of paranoia as the Marine Corps has historically fought for its existence during this phase.

The second phase, transition, is the time when fiscal and manpower reductions are negligible and the size of the force stabilizes. Historically, the onset of this phase and its duration vary significantly, due to economic and political variables. It is during the transition phase when the Marine Corps goes through its most significant explosion of ideas as the concern over the elimination of the Marine Corps has subsided. This phase also sets the foundation for the future of the force.

The final phase, prosperity, is characterized by increases in budgets and manpower, coupled with the full realization of new vision of the Marine Corps. These three phases allow us to model the actions during past interwar periods that will be useful to the Marine Corps to succeed during the upcoming interwar period.

The DOTMLPF institutional pillars are also useful in analyzing the lesson of an interwar period. These pillars describe the necessary operational and functional capabilities required for the Marine Corps to successfully negotiate the coming interwar period. By overlaying the DOTMLPF pillars with the phased actions of the Marine Corps during the historical interwar periods, a pattern emerges that provides a productive template for the future. A successful interwar period is defined by the Marine Corps when it has successfully conducted combat operations while it transformed the force with a new vision, high quality personnel, updated doctrine and organization, and the material solutions that supported the vision, which resulted in a force that is victorious in the next major conflict.

Interwar Period Analysis

The two most pivotal interwar periods in the 20th Century were the post-World War I and post-Vietnam War interwar periods. As the two longest interwar periods in the 20th Century, thirty-two and twenty-eight years respectively, they provide the

clearest examples of the interwar phasing. These two interwar periods are also characterized by more significant DOTMLPF activity than other interwar periods of the 20th Century. Additionally, the Marine Corps of today is postured similarly to where the service was both at the end of World War I and Vietnam. Since the post-World War I and post-Vietnam interwar periods provide the clearest lessons that can be applied to today's Marine Corps, this paper will focus on these two interwar periods.

Post-World War I Interwar Period (1918-1941)

The post-World War I interwar period was bounded by two major wars and included fiscal and personnel reductions at the beginning of the interwar period (austerity), stabilization in the middle (transition), and increases near the end of the interwar period (prosperity).⁸ The Marine Corps was successful during combat operations in the interwar period and successful during World War II because it applied the right changes along the DOTMLPF pillars at the right phases of the interwar period. Austerity Phase (1918-1933)

Coming out of World War I, the Marine Corps earned fame and distinction as a premier fighting force. That being said, the Marine Corps didn't want to revert back to a pre-World War I status of being relegated to base defenses of colonial security missions or worse, be absorbed into the Army. The Marine Corps wanted to be permanently recognized as an independent national defense force. A source of energy for change during the interwar period came from a pre-occupation of the fear of elimination. Fiscal and manpower reductions resulted in change efforts focused internally on manpower reductions and retention of quality Marines to ensure the survival and success of the Marine Corps. Throughout the interwar period, the Marines executed pre-World War I combat missions such as occupation assignments Haiti, China, Santo Domingo, and

Nicaragua, guarding the United States mail, and sustaining naval security globally.

These classic pre-World War I missions did not dissuade the leadership from their vision of the future of the Marine Corps, they capitalized on these missions. The Marine Corps leadership knew they needed to ensure America's political leaders and the general population understood the adaptability and importance of the Marine Corps to the nation.

The study of the failure at Gallipoli and the development of the Rainbow Plans led Major General John A. Lejeune USMC, to a vision of an amphibious Marine Corps. 12 Funding and personnel reductions significantly hampered General Lejeune's abilities to advance the amphibious warfare concepts he envisioned for the Marine Corps, but he invested in this vision where it would pay the most benefit: education.¹³ Using the energy captured from the fear of the Marine Corps being eliminated, he fostered a deliberate learning and adapting environment in the officer corps through the expansion of the Marine Corps Schools where students focused their studies on advanced base defenses, amphibious assault, and small wars. ¹⁴ Additionally, General Lejeune sent high-performing officers to advanced schools run by the Navy, Army, and other foreign countries. General Lejeune sent numerous letters to his officers and gave hundreds of speeches across the nation discussing his vision and future of the Marine Corps. 15 His efforts seeded the service with an educational foundation and a vision to develop the future of the Corps. 16 General Lejeune's solid foundation of professional military education began the momentum of the development of his vision. During the austerity phase, the Marine Corps focused on the pillars of personnel and leadership & education and embedding a new vision for the Marine Corps.

Transition Phase (1933-1936)

With General Lejeune's vision embedded in the Corps and broadcast heavily in the professional military education processes of the Corps, the momentum for change in the Marine Corps continued into the transition phase. The transition period was marked by stabilized funding and personnel for the Marine Corps. Additionally, this phase began when the risk of the Marine Corps being eliminated no longer existed. This stability provided the foundation needed to take the vision to the next step.

The Marine Corps' transformation into an amphibious force was implemented along the DOTMLPF pillars of organizational and doctrinal changes.¹⁷ These changes were embedding mechanisms that reinforced the new amphibious culture of the Corps. The Marine Corps changed its organization into the Fleet Marine Force in 1933, a change that established forces specifically for amphibious operations. 18 This change established forces focused solely on amphibious operations as their primary mission; these forces were constrained from conducting other missions. The Marine Corps published the Tentative Manual for Landing Operations in 1934 and the Tentative Manual for the Defense of Advanced Naval Bases in 1936.¹⁹ These doctrinal documents resulted directly from the educational investment of General Lejeune's students in the Marine Corps Schools of the 1920s. 20 The Marine Corps conducted small-scale exercises to proof the doctrinal and organizational changes, with the equipment it had at the time. Numerous internal lessons learned and ideas from this period, specifically on equipment, were kept until the Marine Corps could afford the mechanical advances required to fulfill the vision in the prosperity phase. The Marine Corps had proofed the reorganized forces and doctrine in light of the new vision and was postured to move into the prosperity phase.

Prosperity Phase (1936-1941)

By the time the Marine Corps transitioned into the prosperity phase, the vision was completely embedded into the service. Now the Marine Corps could financially afford to invest in new equipment to support the vision. During the small-scale exercises in the 1930s the Marine Corps gained information on the equipment requirements to facilitate the future of the amphibious Marine Corps. There were several research and development projects on potential amphibious vehicles, but a product was not realized primarily due to a lack of funding.²¹ Only when the Marine Corps' fiscal situation supported the increased costs did the service purchase its first amphibious assault vehicle in July of 1941.²² The final embedding mechanism for the change to an amphibious Marine Corps was the material advancement; this completed General Lejeune's vision of the new Marine Corps. The prosperity phase saw the advent of leadership and material changes that were the final requirements for the transformation of the Marine Corps from a World War I force into the successful force it was in World War II.

Post-World War I Lessons Learned

The post-World War I interwar period provided a template for actions to support innovation in an interwar period. Overall the changes did not take place quickly, but through persistence and embedding mechanisms, it was successful. During the austerity phase, the Marine Corps focused on the manpower and leadership & education pillars to secure the foundation of the service and invest in its future. The concern of the elimination of the Marine Corps provided the energy for the proper shaping of the manpower of the service to support classical pre-World War I occupation missions, persistent messaging on the importance of the Marine Corps to the nation,

and the development of a new vision. When the Marine Corps moved into the transition phase, it wrote new doctrine and changed the organization to physically embed the new vision into the service. When the Marine Corps moved into the prosperity phase, it focused on the pillars of leadership & education and material. The service appointed leadership that was pivotal to the development of the new vision and completed the change within the Marine Corps with material advancements of the amphibious assault vehicle when there were sufficient funds to do so. Marines such as Earl Ellis, Thomas Holcomb, Alexander Vandegrift, Roy Geiger, and Holland Smith²³ were developed by the education investment during the austerity phase of the post-World War I interwar period, as was the amphibious assault vehicle, and all proved to be pivotal for the Marine Corps during World War II.

Post-Vietnam Interwar Period (1971-1991)

Another interwar period that provided quality lessons learned was the time between the Vietnam War and the Gulf War. This time period also exemplifies the classic traits of an interwar period as it was bounded by two major conflicts and saw the typical fiscal and manpower drawdown at the beginning (austerity), stabilization in the middle (transition), and increases at the end (prosperity).²⁴ The Marine Corps was successful during combat operations in the interwar period and successful during the Gulf War because it applied the right changes along the DOTMLPF pillars at the right phases of the interwar period.

Austerity Phase (1971-1979)

In 1971, the Marine Corps found itself on familiar yet unstable ground. During the Vietnam War, the Marine Corps spent nearly six years side-by-side with the United States Army conducting protracted ground combat operations. General Robert E.

Cushman USMC pushed for a re-establishment of the Marine Corps as the amphibious force for the nation because he didn't want the Marine Corps to be seen as another land army. Individuals and think tanks stated that the Marine Corps needed to transform itself into an organization equipped primarily for sustained ground combat for inland operations in Europe alongside the US Army during the Cold War. The Marine Corps' concern about its potential elimination was used by General Cushman to focus on the advancement of quality of Marines in the service and to develop a new vision for the Corps.

Also during the austerity period of the post-Vietnam interwar period, the Marine Corps began a significant budget and personnel drawdown. This manpower drawdown was additionally complex because it was reducing its endstrength and converting into the all-volunteer force. General Cushman focused on manpower quality during the drawdown and not on material modernization,²⁷ as he wanted to ensure that Marine entry training remained tough to build and sustain the Marine esprit de corps.²⁸ General Cushman invested in the abilities of his Marines through education and schools, and professional discourse all the while maintaining the core capabilities, requirements, and responsibilities to the nation with the operational readiness of the Marine Corps.

General Cushman wrote several professional articles, discussing the future of the Marine Corps. The most important factors in his articles were his concerns for costs and personnel reductions, coupled with his desire to ensure that the Marine Corps sow the seeds necessary to ensure the Marine Corps' ability to adapt to the unexpected.²⁹ He outlined ideas for advanced, high speed amphibious ships, a future generation of

vertical/short take-off and landing aircraft, and theoretical employment concepts for the future of the Marine infantry battalion, but there must be tradeoffs for modernization and manpower.³⁰ This set the groundwork for a purposeful plan to re-create the identity of the Marine Corps.

General Louis H. Wilson USMC followed in the direction of General Cushman and made his primary focus the individual, amphibious Marine. He enhanced operational readiness through intense individual and collective training by establishing a combined arms training center at the Marine base in Twenty-nine Palms, California.³¹ Additionally, General Wilson established a study to look at mission and force structure requirements to provide a combined arms force that is responsive to threats globally.³² This structure study would begin the eradication of the hollow Marine Corps where structured units would finally be manned at adequate levels.³³ At the end of the austerity period, the quality and quantity of the Marine Corps had reached a satisfactory level where the senior leadership of the service could focus more on the future of the Marine Corps as it entered the transition phase of the interwar period.

Transition Phase (1979-1983)

Having stabilized its fiscal and personnel losses, the Marine Corps quickly moved into the transition phase. This phase was highlighted by the maneuver warfare concept as a seed of a new vision for the Corps. Following the example of General Cushman, innovative thinkers like William S. Lind and Captain Stephen W. Miller USMC began offering ideas of highly mobile amphibious forces having a significant impact in the European theater in the professional magazines of the Marine Corps. Colonel John A. Boyd USAF (Retired), gave a briefing titled 'Patterns of Conflict' to the Marine Corps Amphibious Warfare School that resulted in a change in the curriculum to teach

maneuver warfare as a key operational concept in the Marine Corps.³⁵ Major General Al Gray USMC, Commanding General of the 2d Marine Division, established a board of Marines to develop and promulgate Maneuver Warfare theory at Camp Lejeune.³⁶ These actions served as embedding mechanisms for the future of the Marine Corps vision during this transition phase.

As a supporting effort to the developing vision, the Marine Corps adjusted organizational constructs in support of the new vision of maneuver warfare. As the ability to rapidly move forces to the decisive point is a critical component of maneuver warfare, the Marine Corps established itself as an integral part of the nation's newly formed immediate response force. This organizational change ensured the Marine Corps remained relevant to the nation and sustained its readiness within the Marine Corps. General Barrow ensured a Marine General led the first Rapid Deployment Joint Task Force. Additionally, the Marine Corps advanced the concept of developing the Maritime Prepositioning Ships program. General Barrow initiated the plans to forward preposition combat equipment and sustainment supplies to rapidly build up combat power and conduct sustained operations in a distant theater.³⁷ Organizational changes further established the Marine Corps as an amphibious force that was relevant for the Cold War by providing a new dimension in mobility and global response.³⁸ At the end of the transition phase, the new vision of the Marine Corps was taking hold and organizational changes were supporting that vision. Although the doctrine wasn't written yet, the fiscal situation was ripe to move into the prosperity phase.

Prosperity Phase (1983-1991)

The last eight years of the post-Vietnam interwar period, the prosperity phase, were highlighted by the affluence in funding and personnel in the Marine Corps during

the height of the Cold War. General Paul X. Kelley USMC, who led the first Rapid Deployment Joint Task Force,³⁹ was appointed as the Commandant of the Marine Corps in 1983, thus embedding the leadership that was part of the development of the new vision of the Marine Corps as a maneuver warfare force.

Along the material pillar, the procurement of the Light Armored Vehicle family of vehicles in 1983 was a material advancement supporting the maneuver warfare operational concept. The Light Armored Vehicles were highly mobile vehicles designed to find and exploit the enemy's flanks and weaknesses⁴⁰ and it was an adaptable and light vehicle that was able to rapidly deploy via any tactical air or sealift asset that could operate across the spectrum of conflict.⁴¹ One of the downfalls of a material advancement before the doctrine could be solidified, was the organization supporting the Light Armored Vehicle changed names and missions several times before the completion of the interwar period,⁴² creating unnecessary turbulence for the Marine Corps.

Furthering the concept of Maneuver Warfare, William S. Lind published

Maneuver Warfare Handbook in 1985. Although not officially adopted by the Marine

Corps, the book encapsulated all of the discussion surrounding the concept and

codifying it as a viable combat operational concept. General Gray, who began

teaching maneuver warfare when he was the Commanding General of the 2d Marine

Division, became the Commandant of the Marine Corps in 1987. General Gray

culminated the codification of maneuver warfare in the Marine Corps with the

publication of Fleet Marine Force Manual – 1 Warfighting in 1989. Additionally, General

Gray also began exploration with future equipment that would support maneuver

warfare concepts, such as the MV-22 tilt-rotor "Osprey." ⁴⁴ The period of prosperity was complete, with organizational, doctrinal, and material transformation that facilitated the new vision of a maneuver warfare amphibious Marine Corps. This force proved pivotal during the Gulf War. ⁴⁵

Post-Vietnam War Lessons Learned

The lessons from the post-Vietnam War period align with the lessons from the post-World War I interwar period. Key components of change resulted from the energy produced by the concern of the possible elimination of the Marine Corps. The service was able to skillfully use this energy and focus it on an innovative direction for the Marine Corps. The Marine Corps focused on the pillars of personnel and leadership & education early during the austerity phase and fostered public discourse on the future vision for the Marine Corps. The Marine Corps ensured quality Marines were in the service and that it succeeded during combat operations during the interwar period without being distracted from discovering its new vision. During the transition phase, the Marine Corps focused on codifying its vision of maneuver warfare. Open discourse on maneuver warfare resulted in operational commanders training their Marines on the new vision and educational curricula changing quickly. Unlike the post-World War I period, the new vision was not apparent to the leadership at first. Only through open dialogue was the new vision realized at the end of the transition period. Additionally, organizational changes occurred with the implementation of the rapid deployable task force and operationalized the maritime prepositioning shipping concept. Into the prosperity phase, the pillars of leadership & education, doctrine, and material were the focus. The Marine Corps made officers who led budding maneuver warfare concept organizations as Commandants of the Marine Corps throughout this interwar period.

Unconventionally, the Marine Corps acquired the family of Light Armored Vehicles as a maneuver warfare asset before it published the Fleet Marine Forces Manual-1 Warfighting and codified maneuver warfare into Marine Corps doctrine. A lesson learned was that material acquisition prior to doctrine solidification caused unnecessary organizational changes. That being said, Marine Generals such as Charles C. Krulak, James N. Mattis, James T. Conway, John R. Allen, Joseph F. Dunford, and James F. Amos are all products of the post-Vietnam interwar period and proved to be pivotal for the Corps during the Gulf War and in the Global War on Terrorism. Once again, the Corps was able to successfully conduct combat operations during the interwar period without being distracted away from the future vision of the Marine Corps while successfully transforming the Marine Corps into a maneuver warfare amphibious force that was successful in the Gulf War.

Recommendations for the Current Interwar Period

The Marine Corps of today is heading into another interwar period. This new interwar period is beginning with many of the same characteristics of the two previously described interwar periods. The Marine Corps has been involved in decisive land-based combat, fighting side-by-side with the US Army and the Department of Defense is entering into a time of significant fiscal reduction. In fact, the Marine Corps has already been reducing its topline budget for the past two years and reducing its endstrength as well. A third sign that is always present at the beginning of an interwar period is the fear of the elimination of the Marine Corps. This proposal has been recommended by several critics stating the Marine Corps must be able figure out how to be the decisive power in the time and place that matters in the future, or risk elimination. A new wrinkle to this interwar period is that our strategic guidance

documents describe a security environment more diverse and complex than has been seen in previous interwar periods.⁵⁰

Marine Corps' Way Ahead into the Austerity Phase

As the Marine Corps enters the austerity phase, the lessons learned from the past interwar periods must be considered. In the austerity phase, the energy from the concern of being eliminated must be harnessed. This energy must be applied into the development of a new vision for the Marine Corps and focused on the limited-cost pillars of personnel and leadership & education, which sustain and maintain the culture of the Corps and invest in the future of its Marines. The lessons of the previous interwar periods dictate that the Marine Corps should not focus on attempting to affect significant innovative changes during this period, due to cost, lack of embedding mechanisms, and the need to sustain an operational posture to be able to respond to the nation's call for emerging crises.

As it has done in the past, the Marine Corps should capitalize on the concern of the elimination of the Marine Corps. This concern is healthy for the Marine Corps, and it should turn it into positive energy for change and for creating a new vision of the Marine Corps. The catalyst for the concern in this interwar period came on August 12, 2010 from the Secretary of Defense, the Honorable Mr. Robert Gates, at a speech in San Francisco where he directed the Marine Corps to look at its future organization, lest it be rendered obsolete as a second land army for the nation.⁵¹ General Amos' rebuttal invigorated the energy of the 'adapt-or-die' culture of the Marine Corps with his speech on February 8, 2011. This speech was a seed of the future vision of the Marine Corps: a middleweight force that is the most ready when the nation is least ready.⁵² The Marine Corps must harness this fear of being eliminated and translate it into the drive to

develop a new vision for the future of the Marine Corps. General Amos has continued to push this seed of a vision in an information campaign to keep the Marine Corps in the forefront of the nation's political leadership and the American population. This is a great example of capitalizing on the energy that comes from concerns about the elimination of the Marine Corps.

In the pillar of personnel, actions must be taken to ensure the Marine Corps can execute current customary Marine Corps missions while focusing on the future vision. The Marine Corps' focus on personnel must be on quality over quantity as it relates to the relevancy of the roles and missions. The Marine Corps is already reducing its active duty endstrength from 202,100 Marines to 182,100 Marines (20,000 total, 9.9% reduction) to be completed by fiscal year 2016.⁵³ The Force Optimization Review Group made further efficiencies and effectiveness for the Marine Corps of 182,200,54 but the Marine Corps should not be unsettled about going below 182,200 Marines as an activeduty endstrength. Mission accomplishment and appropriate investment in the future of the Marine Corps are more important than the total number of Marines on an endstrength chart. Focusing on the right personnel, not the right number of personnel will ensure the Marine Corps will be able to successfully execute all current customary missions and posture itself for the future. To be successful during the interwar period, the Commandant of the Marine Corps must maintain a steadfast aim on the future of the Marine Corps.

The next area the Marine Corps should focus on is the pillar of leadership & education. The Marine Corps must make smart financial decisions about the education budget that will favorably impact the future of the Corps. The benefits will not be seen

immediately, but the long term worth is invaluable, as was shown by General Holcomb's attendance at both the Naval War College and the Army War College in the post-World War I interwar period.⁵⁵ It is not simply sending more Marines to school or Marines to more schools; it is sending the right Marines to the right places to gain the right types of education. The Marine Corps has combat hardened leaders who have learned the value of operating in a joint, interagency, intergovernmental, and multinational environment and this will most likely be a critical aspect to the future of warfare.⁵⁶ The Marine Corps needs to send the best Marines, both officer and enlisted, to be educated in the joint, interagency, intergovernmental, and multinational environments through fellowships, and exchange & liaison officer assignments. In addition to sustaining the interoperable skills, this will foster innovative ideas about how to operate and employ the Marine Corps through these diverse experiences. These innovative ideas must be openly discussed and debated inside and outside the Marine Corps. Discussions about Marines being employed on the Navy's Littoral Combat Ships⁵⁷ or on submarines to counter the anti-access/area denial problem⁵⁸ are two examples innovative thought that need to be fostered. Positive embedding mechanisms need to be put into place that rewards Marines for broadening educational opportunities, creative thinking, and extroverted exchanges of ideas.

The Marine Corps has hardened its officer and non-commissioned officers with a decade of combat. Codifying the lessons learned from the last twelve years of combat into doctrinal manuals must be completed as well. This will foster more reading and writing in the Corps and spur invaluable discussions. An example of this was General Cushman's regular publications in the Marine Corps Gazette during the post-Vietnam

interwar period. Leaders frequently publishing their thoughts will foster an environment that will advance new ideas and concepts to further solidify the future vision of the Marine Corps. Leader education, across all ranks of the Marine Corps, coupled with embedding mechanisms to reinforce the value of education and discussion, must be a priority. The Marine Corps must protect and foster the intellectual capitol it has successfully developed through nearly twelve years of combat through leader education, as it did in previous interwar periods.

Significant doctrinal, organizational, or material changes should not be undertaken during this austerity phase. Writing innovative doctrine or dramatically changing the organization will be irrelevant until the future vision of the Corps is identified, ingrained, and codified. The Marine Corps needs to rely on its sister services for complimentary and/or duplicative capabilities and skillfully observe their acquisitions programs. The Marine Corps must continue its frugal ways until it moves out of the austerity phase. The Marine Corps needs to continue its efforts to further identify, ingrain, and codify a vision for the future of the Marine Corps during the austerity phase.

The next significant venture for the Marine Corps during the austerity phase is the development of a vision for the future of the Marine Corps. The most significant aspects of a vision for the Marine Corps of the future were issued on February 8, 2011, which was the General Amos' official response to the Secretary of Defense's August 2010 challenge to the roles and missions of the Marine Corps. Two key themes from this vision are seeds for the future of the Marine Corps today: the Corps is a middleweight force that is lighter than the Army and heavier than the special operations

forces, and that the Marine Corps must be the force that is the most ready when the nation is least ready.⁵⁹ This is the beginning of a future vision for the Marine Corps.⁶⁰

The Marine Corps is an inherent naval force and it must maintain that culture and skill. The relationship with the US Navy, more than institutional, must be fostered and nurtured. However, during the last decade the Marine Corps continually deployed Marine Expeditionary Units on United States Naval warships, amphibious skills have atrophied. The Commandant of the Marine Corps has established the Ellis Group, a task force within the Marine Corps dedicated to re-invigorating the naval heritage by focusing on innovation in naval warfighting, furthering the Navy-Marine Corps relationship with US Special Operations Command, and focusing our innovation efforts in naval warfighting and littoral maneuver warfare. Holistically, The Ellis Group is looking at naval warfare through the lens of enabling the Marine Corps' ability to rapidly respond to crises within the new fiscal constraints.⁶¹ The use of the Ellis Group is another step in the development of the future vision for the Marine Corps. The Marine Corps should invest the manpower into organizations that can creatively investigate innovative ways to foster a new vision for the Marine Corps, like the Ellis Group.

It is important to note that development on a future vision is critical to setting the proper foundation for the new interwar period. A new vision for the Marine Corps isn't solidified and codified in the austerity phase. As shown in post-World War I and post-Vietnam interwar periods, it wasn't until the transition and prosperity phases that the true vision for the future of the Marine Corps was fully established.

Marine Corps' Way Ahead into the Transition and Prosperity Phases

The previous interwar periods provide key indicators to identify when the Marine Corps will move out of the austerity phase and into the transition phase, and

subsequently into the prosperity phase. There are fundamental actions that need to occur in the follow-on phases in order to continue the positive progression of the Marine Corps. Ensuring the proper order of the changes along the DOTMLPF pillars will ensure the investment, both fiscal and intellectual, is worthwhile.

The most significant indicator of the end of the austerity phase is when the budget and manpower changes are no longer on a downward trend. There may be minor fluctuations, as happened with the manpower levels during the post-Vietnam austerity phase, ⁶² but the overall trend must be one of no more sustained loss. Only when the Marine Corps' budget and manpower conditions level out and the fear of elimination is no longer present will the Marine Corps move into the transition phase of the interwar period.

In the transition phase, the Marine Corps must maintain the standards for its manpower and sustain its investment in leadership & education pillars. This is paramount throughout the interwar period, as shown by the post-World War I and post-Vietnam examples. In the transition phase, the Marine Corps needs to focus on three major areas: vision, doctrine, and organization. Codifying the vision during the transition phase is an absolute must. In both previous interwar periods, the Corps reaped the investment benefits of education and innovative discussions that came together and were melded into a new vision for the Marine Corps. A new vision must be embedded into the Marine Corps before venturing into organizational or doctrinal changes. This was done in the post-Vietnam interwar period with the vision of maneuver warfare being implemented at the Amphibious Warfare School and in the 2d Marine Division. Once the vision is codified, the Marine Corps needs to adjust its

organization to support the new vision and updated the appropriate doctrine. This physical adjustment to the structure of the Marine Corps will set up the Marine Corps for the future material requirements that will be advanced in the prosperity phase.

Just as there is no set length for the austerity phase, the transition and prosperity phases do not have a set length. Only once the vision, doctrine, and organization are in place, and there are increases in budget and manpower strengths, will the prosperity phase be attained. The prosperity phase is characterized by the acquisition of the materials needed to make the vision a reality. Only with the doctrine and organization adjusted to support the vision is it appropriate to venture into the expensive realm of material advancements to make the vision a reality. A prime example of this is the 1941 acquisition of the first amphibious assault vehicles during the post-World War I interwar period. Only with the vision codified, the doctrine written and the organization set, was the force ready to acquire the correct material solution to make the vision a reality. It is an absolute requirement that the Marine Corps only focus on material solutions to support the vision during the prosperity phase of an interwar period.

Conclusion

As the Marine Corps moves into another interwar period, there are significant parallels and great lessons to be learned from the post-World War I and post-Vietnam War interwar periods on how to appropriately transform the Marine Corps for the future. Only with an understanding of the three phases of an interwar period, austerity, transition, and prosperity, and a focus on the appropriate DOTMLPF pillars in each phase, will the Marine Corps successfully traverse the current interwar period and be postured for success in the next major conflict. During the austerity phase, the Marine Corps needs to focus on developing a new vision for the Marine Corps and the pillars of

leadership & education and personnel. Harnessing the energy from a fear of elimination, the Marine Corps needs to creatively determine its future vision, and relentlessly pursue it. The Marine Corps must invest smartly in the leader education to foster innovative thinking, writing, and discussions about the future of the Marine Corps. Additionally, the Marine Corps must sustain the high standards of the Marines in the service and not be concerned about sustaining a certain endstrength number while simultaneously remaining capable of conducting crisis-response operations without being distracted away from the development of a new vision. Once the period of austerity is over, only then can the Marine Corps go forward with codifying a vision and adapting the doctrine and organization of the service in support of the new vision in the transition phase. Only when these changes are made, and the fiscal situation allows for significant outlays, should the Marine Corps procure the material requirements to make the vision a reality. With the material requirements fulfilling the vision, the Marine Corps will be postured for future success in the next major conflict and will thrive during a successful interwar period.

As history tends to be cyclical, the lessons learned from the post-World War I and post-Vietnam interwar periods are critical to navigating the current interwar period. It is imperative that the Marine Corps follow the lessons learned to be successful during and at the end of this interwar period. The heritage of the Marine Corps is strong, and its predecessors have left a clear path to follow to be successful once again. It is incumbent on the leadership of the Marine Corps to follow the template and transform the Marine Corps appropriately so it can continue to win our nation's battles.

Endnotes

- ¹ General James N. Mattis USMC, *Joint Operating Environment 2010*, (Suffolk VA: U.S. Joint Forces Command, February 18, 2010), 11.
- ² Micah Zenko, "100% Right 0% of the Time," October 16, 2012, Foreign Policy, http://www.foreignpolicy.com/articles/2012/10/16/why_the_military_cant_predict_the_next_war (accessed October 17, 2012).
- ³ U.S. Joint Chiefs of Staff, *Joint Capabilities Integration and Development System*, U.S. Chairman of the Joint Chiefs of Staff Instruction 3170.01H, (Washington DC: U.S. Joint Chiefs of Staff, January 10, 2012), 2.
- ⁴ The author researched for months, finding numerous references to the post-World War I interwar period with varying dates, stretching as far as 1914 to 1945 and as narrow as 1919 to 1938. That being said, the specific dates of the post-World War I interwar period are important, but is not detrimental to the thesis presented in this paper.
- ⁵ Colonel Michael J. Meese USA, Ph.D., "The Economy and Its Effect on the Nation and U.S. Defense," briefing slides with scripted commentary, Carlisle Barracks, PA, U.S. Army War College, November 1, 2012.
- ⁶ Although the current administration has eliminated the use of this term, the combat and stability operations in Iraq and Afghanistan from 2001 through the present were originally called the "Global War on Terrorism". This is a commonly understood term that fully encompasses Marine Corps actions in Operations ENDURING FREEDOM and IRAQI FREEDOM.
- ⁷ Allen R. Millett, *Semper Fidelis: The History of the United States Marine Corps*, (New York: Macmillan Publishing Company, 1980), 456-457.
 - ⁸ Meese, "The Economy and Its Effect on the Nation and U.S. Defense."
 - ⁹ Millett, Semper Fidelis, 318-325.
 - ¹⁰ Millett, Semper Fidelis, 322.
- ¹¹ Annual Reports of the Navy Department for the Fiscal Year 1921, (Washington DC: Government Printing Office, 1921), 52.
 - ¹² Murray and Millett, *Military Innovations in the Interwar Period*, 70.
 - ¹³ Millett, Semper Fidelis, 322-323.
- ¹⁴ David J. Ulbrich, *Preparing for Victory: Thomas Holcomb and the Making of the Modern Marine Corps* 1936-1943, (Annapolis, MD: Naval Institute Press, 2011), 28.
- ¹⁵ Captain Robert B. Asprey USMC, "John A. Lejeune: True Soldier," *Marine Corps Gazette*, April 1962, http://www.mca-marines.org/node/27182 (accessed December 14, 2012).

¹⁶ Ibid.

- ¹⁷ Michael B. Siegl, "Military Culture and Transformation," *Joint Forces Quarterly 49*, 2d Quarter 2008, http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA518278 (accessed December 2 2012), 106.
- ¹⁸ Major General John H. Russell, Jr., Fleet Marine Force: Compliment to Navy Department General Order No. 241, U.S. Marine Corps Order 66, https://www.mcu.usmc.mil/historydivision/Pages/Speeches/Marine-Corps-Order66.aspx (accessed December 14, 2012).
 - ¹⁹ Ulbrich, *Preparing for Victory*, 34.
- ²⁰ Joseph Henrotin, "The Interwar Years as a Golden Age in U.S. Marine Corps History," *Défense et Sécurité Internationale*, No. 22 (February-March 2012): 20.
- ²¹ U.S. Marine Corps Air-Ground Museum, "The Alligator Amphibian: A Historical Engineering Landmark," May 21, 1997, http://files.asme.org/asmeorg/communities/history/landmarks/5490.pdf (accessed February 10, 2013), 5.
 - ²² Ibid.
 - ²³ Ulbrich, *Preparing for Victory*, 28.
 - ²⁴ Meese, "The Economy and Its Effect on the Nation and U.S. Defense."
- ²⁵ Terry Terriff, "Innovate or Die': Organizational Culture and the Origins of Maneuver Warfare in the United States Marine Corps," *Journal of Strategic Studies 29*, No. 3, https://dx.doi.org/10/1080/01402390600765892 (accessed October 31, 2012), 485.
- ²⁶ Millett, *Semper Fidelis*, 607-608, and Captain John E. Knight Jr., USMC, "The Arabs and Israel in Perspective: The October War and After," *Marine Corps Gazette 58*, No. 6 (June 1974), 34; Colonel Gerald H. Turley, USMC, "Time of Change in Modern Warfare," *Marine Corps Gazette 58*, No. 12 (December 1974), 16.
- ²⁷ General Robert E. Cushman USMC, "To the Limit of Our Vision and Back," *Proceedings 58*, No. 5, (May 1974): 115.
- ²⁸ General Robert E. Cushman USMC, "Statement Before the Committee on Armed Services Subcommittee on Defense House of Representatives Concerning FY 73 Marine Corps Posture," Department of the Navy, Headquarters United States Marines Corps, March 14, 1972, U.S. Marine Corps History Division, 14.
 - ²⁹ Cushman, "To the Limit of Our Vision and Back," 121.
 - ³⁰ Ibid., 115.
 - ³¹ Millett, Semper Fidelis, 617.
- ³² General Louis H. Wilson USMC, "Report to the U.S. Senate Armed Services Committee on the Marine Corps Mission, Force Structure, Manpower Levels, and Personnel Quality,"

Department of the Navy, Headquarters U.S. Marines Corps, December 31, 1975, Marine Corps History Division, 4.

- ³⁵ Fideleon Damian, *The Road to FMFM-1: The United States Marine Corps and Maneuver Warfare Doctrine, 1979-1989*, Master of Arts Thesis (Manhattan, KS: Kansas State University, May 2008), http://hdl.handle.net/2097/555 (accessed February 10, 2013), 78-79.
- ³⁶ Anonymous, "Maneuver Warfare Board at Lejeune," *Marine Corps Gazette*, (October 1981), 6, and Damian, "The Road to FMFM-1," 84-86.
- ³⁷ John Pike, "Maritime Prepositioning Ships (MPS)," GlobalSecurity.org, http://www.globalsecurity.org/military/systems/ship/sealift-mps.htm (accessed December 19, 2012).
- ³⁸ Neimeyer, "A Historical Summary of Selected Strategic Initiatives of Former Marine Corps Commandants," 4.
- ³⁹ Paul K. Davis, "Observations on the Rapid Deployment joint Task Force: Origins, Direction, and Mission," *The Rand Paper Series*, June 1982, http://www.rand.org/content/dam/rand/pubs/papers/2005/P6751.pdf (accessed December 18, 2012).
- ⁴⁰ Lieutenant Colonel Randy B. Carlton USMC, "New Armor Force For The Marine Corps," U.S. Army War College, Carlisle Barracks, PA, January 15, 1998, http://www.dtic.mil/cgibin/GetTRDoc?AD=ADA342290 (accessed December 12, 2012), 19-20.
- ⁴¹ Major John P. Gritz USA, "Light Armored Vehicle or Light Armored Victim," *Marine Corps Gazette 66*, No. 8 (August 1982): 66.
- ⁴² G J. Michaels, *Tip of the Spear: U.S. Marine Light Armor in the Gulf War* (Annapolis, MD: U.S. Naval Institute Press, 1998), 35-41.
 - ⁴³ William S. Lind, *Maneuver Warfare Handbook*, (Boulder, CO: Westview Press, 1985), 3.
- ⁴⁴ Neimeyer, "A Historical Summary of Selected Strategic Initiatives of Former Marine Corps Commandants," 5.
- ⁴⁵ Lieutenant Colonel Joseph Composto USMC, *Desert Storm and the Amphibious Assault*, Strategy Research Paper (Newport, RI: U.S. Navy War College, May 20, 1991), http://www.dtic.mil/cgi-bin/GetTRDoc?Location=U2&doc=GetTRDoc.pdf&AD=ADA240240 (accessed 23 February 2013), 23-26.
- ⁴⁶ Andrew F. Krepinevich Jr., "Strategy in a Time of Austerity," *Foreign Affairs*, November/December 2012, http://www.foreignaffairs.com/print/135462 (accessed November 12, 2012).

³³ Ibid., 24.

³⁴ Terriff, "Innovate or Die," 494-496.

- ⁴⁷ General James F. Amos USMC, "2012 Report to the Senate Armed Services Committee on the Posture of the United States Marine Corps," March 15, 2012, https://www.manpower.usmc.mil/portal/page/portal/M RA HOME/MP/MPP/Z Drawdown%20Inf ormation (accessed September 15, 2012), 3-6.
- ⁴⁸ Colonel Bill Tosick USMC, "Manpower Drawdown," briefing slides with scripted commentary, Carlisle Barracks, PA, U.S. Army War College, April 6, 2012, https://www.manpower.usmc.mil/portal/page/portal/M_RA_HOME/MP/Z_Drawdown%20Information (accessed December 2, 2012), 3.
- ⁴⁹ Stephen M. Walt, "The End of the American Era?" *The National Interest*, No. 116, (November/December 2011), http://search.proquest.com.ezproxy.usawcpubs.org/docview/900447779/fulltext/1383DD8374F3 F72CC28/3?accountid=4444 (accessed December 3, 2012), 13.
- ⁵⁰ General Martin E. Dempsey USA, *Capstone Concept for Joint Operations: Joint Force* 2020 (Washington DC: U.S. Joint Chiefs of Staff, September 10, 2012), http://www.dtic.mil/futurejointwarfare/concepts/ccjo_2012.pdf (accessed February 3, 2013), 3-4.
- ⁵¹ Jim Garamone, "Gates Orders Marine Corps Force Structure Review," *American Forces Press Service*, August 12, 2010, http://www.defense.gov/News/NewsArticle.aspx?ID=60423 (accessed September 12, 2012).
- ⁵² General James F. Amos USMC, "Role of the United States Marine Corps," Department of the Navy, Headquarters U.S. Marine Corps, http://leadingmarines.com/2011/02/09/commandants-vision-for-a-middleweight-force.aspx (accessed September 12, 2011).
- ⁵³ Amos, "2012 Report to the Senate Armed Services Committee on the Posture of the United States Marine Corps," 5.
- ⁵⁴ General James F. Amos USMC, "CMC Guidance and Intent for Force Optimization Review Group," undated, received October 16, 2012 from the Force Optimization Review Group.
 - ⁵⁵ Ulbrich, *Preparing for Victory*, 32-33.
- ⁵⁶ Admiral Michael G. Mullen USN, "CJCS Guidance for 2008-2009," November 17, 2008, http://smallwarsjournal.com/documents/cjcsguidance.pdf (accessed February 23, 2013), 1; and Gabriel Marcella, *Affairs of State: The Interagency and Nation Security* (Carlisle Barracks, PA: Strategic Studies Institute, December 2008), 31-44.
- ⁵⁷ Dakota L. Wood, *The US Marine Corps: Fleet Marine Force for the 21*st Century, (Washington DC: Center for Strategic and Budgetary Assessments, 2008) http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA491834 (accessed February 18, 2013).
- ⁵⁸ Major Scott A. Cuomo USMC and Billy Birdzell, "Submarine Stormtroopers", *Proceedings* 138, No. 11 (November 2012), http://www.michaelyon-online.com/images/pdf/cuomo-nov-12.pdf (accessed February 3, 2013), 40-45.

- ⁵⁹ General James F. Amos USMC, "Role of the United States Marine Corps," Speech delivered at the Marines Memorial Association as part of the George Shultz Lecture Series given at the Marine Memorial Club in San Francisco, CA, February 8, 2011, http://leadingmarines.com/2011/02/09/commandants-vision-for-a-middleweight-force.aspx (accessed September 12, 2011).
- ⁶⁰ The current Marine Corps direction is outlined in the Marine Corps Vision and Strategy 2025. This document outlines, by ends, ways, means, and strategy to be used to outline how the Marine Corps contributions to the Combatant Commanders in support of the national strategic defense directives. Fundamentally, Marine Corps Vision and Strategy is a refocusing document; orienting Marines on the fundamentals of ensuring the Marine Corps invests in the training and education of its high quality recruited Marines, maintaining forward deployed forces on naval shipping, ensuring our adaptability to operate in littoral and urban environments, and be expandable to support operations across the range of military operations. This strategy was updated by General James F. Amos, the 35th CMC, in his Commandant's Planning Guidance on October 27, 2010. Although not a vision for the future of the Marine Corps, this document reaffirms the Marine Corps' focus on the development of the individual Marine and sets a solid foundation for the austerity phase.
- ⁶¹ Colonel Jerome Driscoll USMC, "Seizing Opportunities", Ellis Group briefing slides with commentary to the U.S. Marine Corps Executive Off-Site, September 28, 2012.
- ⁶² United States Marine Corps History Division, *Marine Corps Fiscal Year End Strengths from 1798-2011*, https://www.mcu.usmc.mil/historydivision/Pages/Frequently_Requested/EndStrength.aspx (accessed October 2, 2012).
 - 63 U.S. Marine Corps Air-Ground Museum, "The Alligator Amphibian," 5.